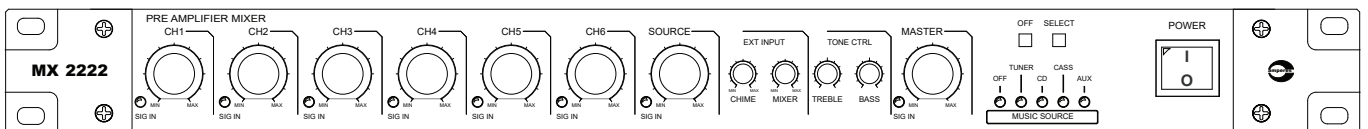




INSTRUCTION MANUAL

MX2222

12 Inputs Pre-Amplifier Mixer



Thank you for choosing another quality product from Amperes Electronics.

MX2222 has been improved further to deliver a better performance in terms of frequency response, lower noise and other functions for better user experience, although it looks similar in appearance as compared to its previous versions.

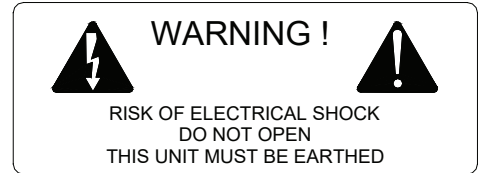
MX2222 is a product made from years of experience and untiring research in BGM / Paging applications, making it suitable for general paging setup or BGM broadcasting, conference room audio mixing, lecture hall sound reinforcement systems and many other applications to your imaginations.

Amperes MX2222 is a great product that offers reliability, accuracy and quality, in which every unit is tested with stringent testing procedures. Make it a part of your delicate system and experience what Amperes has to offer from its range of products.



Important Safely Instructions

The lightning flash symbol with arrowhead within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure, that may be sufficient magnitude to be a risk of electric shock to person.



The exclamation mark within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING - When using electric products, basic precautions should always be followed including the followings :

1. Read all the SAFE INSTRUCTIONS before using the product.
2. This product must be earthed. If it should malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce risk of electric shock.

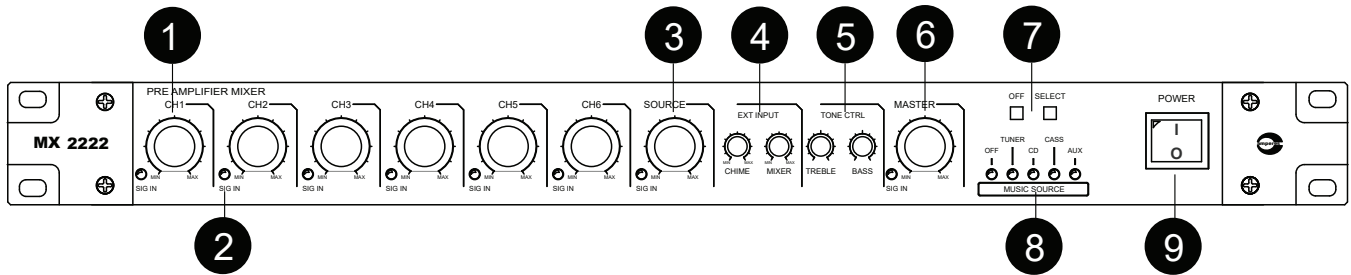
This product is equipped with a cord having an equipment grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and earthed in accordance with all local codes and ordinance.

DANGER Improper connection of the equipment-grounding connector can result in a risk of electric shock. Check with a qualified electrician or servicemen if you are in doubt as to whether the product is properly grounded. Do not modify the plug provided with the product, If it will not fit the outlet, have a proper outlet installed by a qualified electrician.

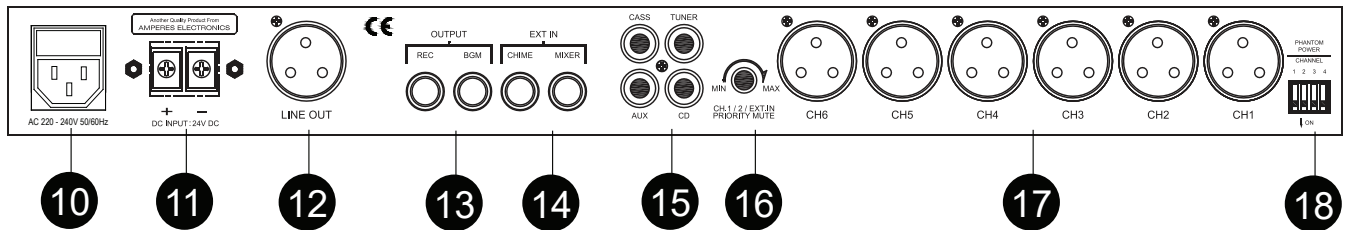
3. To reduce the risk of injury , close supervision is necessary when the product is used near children.
4. Do not use this product near water, for example, near a bathtub, washbowl, kitchen sink, in a wet basement or near a swimming pool or the like.
5. This product should be located so that its location or position does not interfere with its proper ventilation.
6. This product should be located away from heat sources such as radiators, heat registers or other products that produce heat.
7. This product should be connected to a power supply only of the type described on the operating instructions or as marked on the product.
8. This product may be equipped with a polarized line plug (one blade wider than the other). This is a safety feature. If you are unable to insert the plug into the outlet, contact an electrician to replace your obsolete outlet. Do not defeat the safety purpose of the plug.
9. The power supply cord of the product should be unplugged from the outlet when left unused for a long period of time. When unplugging the power supply cord, do not pull on the cord, but grasp it by the plug.
10. Care should be taken so that object do not fall and liquid are not spilled into the enclosure through openings.
11. The product should be serviced by a qualified service personnel when :
 - a. The power supply cord or the plug has been damaged, or
 - b. Objects has fallen, or liquid has been spilled into the product, or
 - c. The product has been exposed to rain, or
 - d. The product does not appear to operate normally or exhibits a marked change in performance, or
 - e. The product has been dropped or the enclosure damaged.
12. Do not attempt to service the product beyond that described in the user-maintenance instructions. All other serving should be referred to qualified service personnel.
13. **WARNING** - do not place objects on the products' power cord or place it in a position where alone could trip over, walk on or roll anything over it. Do not allow the product to rest on or to be installed over power cords of any type. Improper installations of this type create the possibility of fire hazard and / or personal injury.

Parts Identifications and Functions

FRONT VIEW



REAR VIEW



1. INPUT VOLUME KNOBS

Mic / line input level knobs for channel 1 to 6. Input channel 1 and 2 (including external mixer and chime inputs) shall have priority over other inputs. They shall mute or duck other signals and the level of muting is adjustable using the rear muting knob (part nbr 16).

By default, the inputs had been set to receive mic level. To change them to receive line input level, see section “ Changing input level ”.

2. INPUT SIGNAL LEDs

Signal presence at individual channel is indicated by the LED with its intensity following the input level.

3. BGM SOURCE LEVEL KNOB

It is for adjusting the level of music source signal selected from the source selector.

4. CHIME / EXTERNAL MIX INPUT LEVEL KNOBS

External chime / tone or siren tone generator and link from external mixer shall have priority over other input sources except Mic / Line input 1 and 2. To mute or mix these inputs with other mic / line sources, adjust the muting level knob (part number 16) accordingly.

5. BASS AND TREBLE CONTROL KNOBS

Tune the bass and treble level to suit listening preference or to suit the environment of installed speakers

6. MASTER KNOB

Final mixed audio is controlled via Master Knob. It is recommended to lower down the volume after each usage to avoid sudden audio surge to your system, which may damage the speakers.

7. SOURCE SELECTOR BUTTON

The 4 BGM sources (via RCA jacks) is selected by using the daisy chain source select button.

Parts Identifications and Functions

8. BGM SOURCE SELECTION INDICATOR LEDs

Selected BGM source is indicated by the corresponding LED.

9. MAINS POWER SWITCH

This switch controls the AC power source to the mixer. If the unit is also connected to 24V DC back up supply, power will still be supplied to the mixer even when the switch is Off.

10. AC POWER INLET

The unit operates under 220 - 240V AC mains supply unless otherwise specified. The AC fuse located at the IEC connector is rated at max 5A.

11. 24V DC INPUT TERMINAL

MX2222 can also operate using 24V DC supply. When both AC and DC sources are available and connected to the mixer, it will operate using the mains supply whereas DC source shall take over when the mains is disconnected.

We recommend that only a regulated 24V DC supply is used. Do not connect directly to the charging battery terminals as backup source as this may damage the unit.

12. MIXER MAIN OUTPUT

The XLR connector provides balanced line output for all mixed signal sources. It is electronically balanced with 600 Ohm impedance with +4 dBu output level.

13. REC AND BGM OUTPUTS (PHONE JACK)

These outputs are designated as Rec (Record - unbalanced) and BGM (Background Music - balanced). Record provides line audio (-4 dBu) for external recording purpose while BGM audio is available for selected BGM sources. This can be used for dual channel BGM / Paging broadcast system (Uninterrupted Paging).

14. CHIME & EXT MIXING INPUTS

These two input jacks facilitate external priority inputs which will mute other channels (except Mic/Line 1 and 2). Muting or mixing level can be adjusted at knob part number 16. Chime input is unbalanced whereas Ext.Line input is balanced.

15. BGM SOURCE INPUTS (RCA JACKS)

BGM sources labeled as Cass, CD, Tuner and Aux with RCA unbalanced line inputs can be selected using the front daisy chain source selector button.

16. PRIORITY MUTE LEVEL KNOB

It controls the muting or mixing level of priority channels (Mic/Line 1,2, Ext Mixer & Chime) and the other sources. It can be set to totally mute or mix for normal audio mixer applications. Adjust to "Max" shall cut all non priority audio whereas "Min" shall provide normal audio mixing.

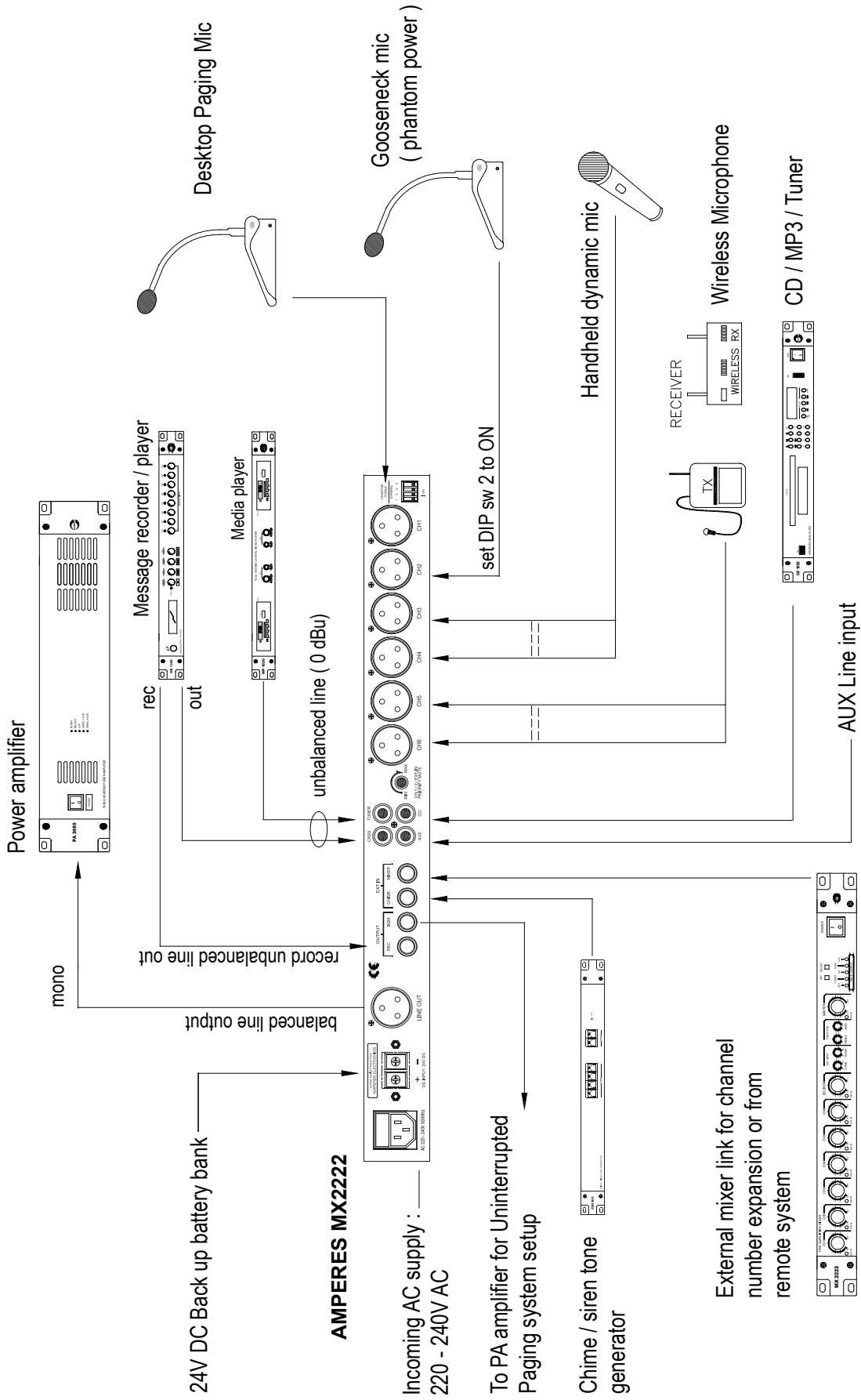
17. MIC / LINE INPUTS (XLR BALANCED)

By defaults, all XLR inputs has been set to Mic level. In case line input is required, some jumper setting inside the unit has to be done. See section " Changing Input Level "

18. PHANTOM POWER SWITCH

Phantom power of 12V DC for Input CH1 to CH4 is available for application with condenser microphones. It is recommended to be switched off for use with dynamic microphones or other active input sources.

General Application



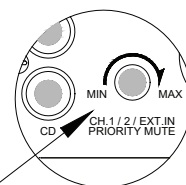
Above diagram shows typical equipments that can be connected to the mixer. Channel allocation for equipment shall not be necessary follow the above illustration.

Application Example - Uninterrupted Paging System

The schematic below illustrates a setup for a basic uninterrupted paging system.

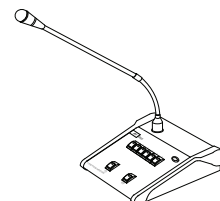
Note that the Priority Muting knob is adjusted to the Max., to allow full muting whenever a paging is active.

Other equipment such as amplifier changeover unit, back up batteries etc are not shown and can be added as required.

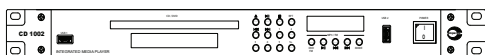


Adjust to Max

Amperes PM1000 Series paging microphone



Amperes CD1002 Media player



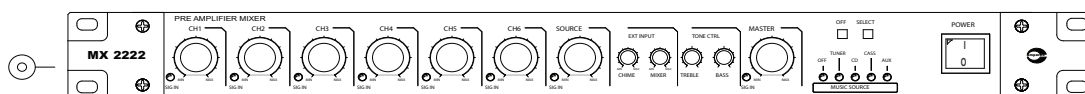
Other music sources

MX2222 Pre-amplifier Mixer

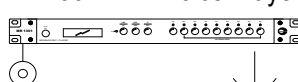
Music inputs to BGM RCA jacks

Input to Channel 1

Zone control



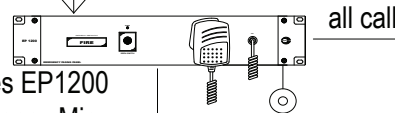
MR1301 MKII Voice Player



Main Mix output

BGM Out

Amperes EP1200 Emergency Mic



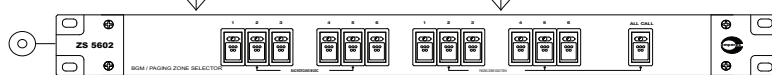
BGM Power amplifier



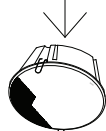
Paging Power amplifier



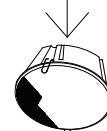
Amperes ZS5602 Uninterrupted Paging Zone Selector



100V



100V

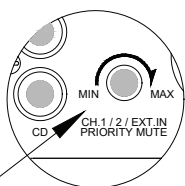
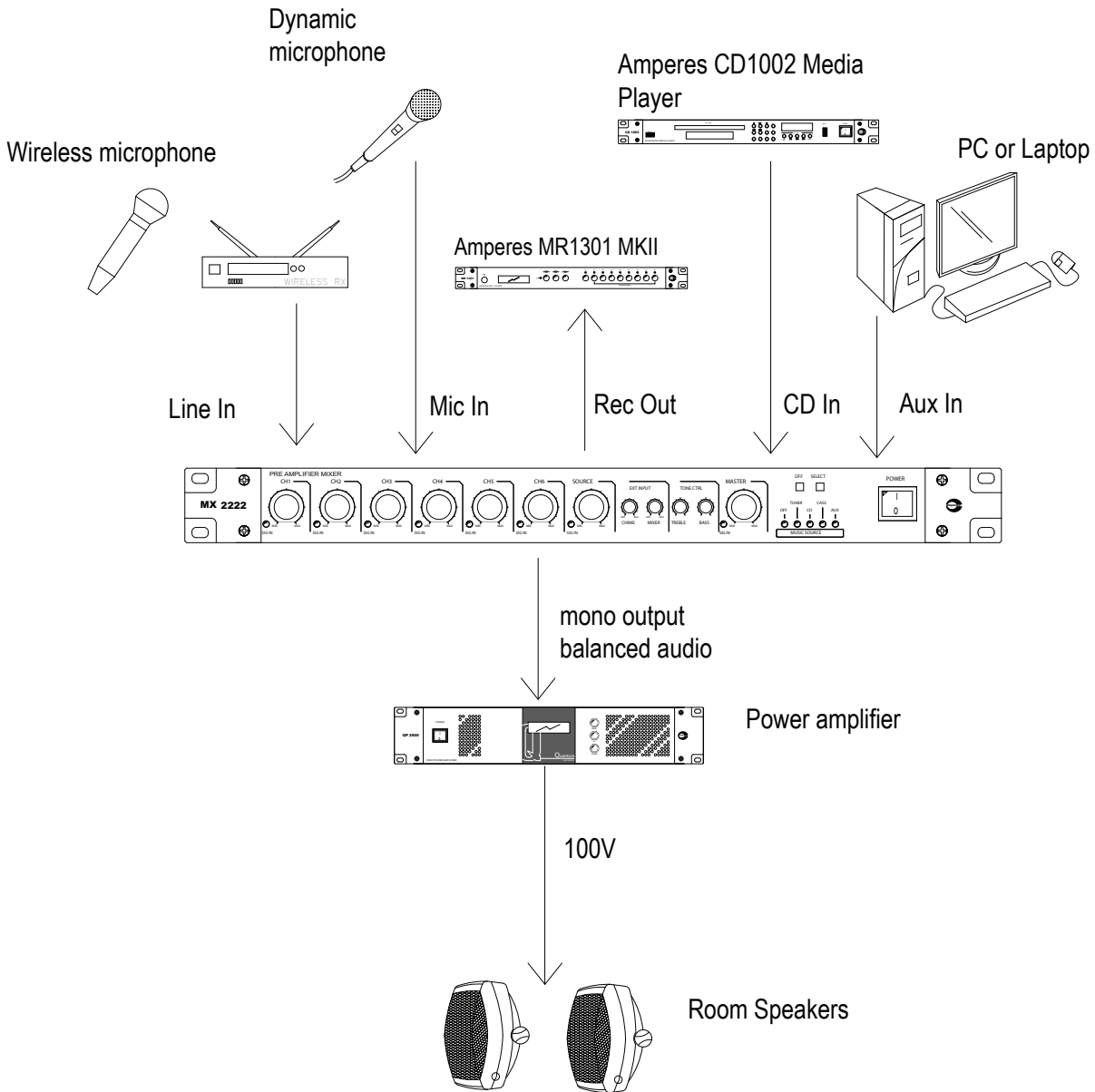


Zone Speakers

Application Example - Lecture Hall / Conference Room

Below is an example of system in a lecture hall, conference room or similar application. All equipment shall be powered via AC mains or through power adapters without back up supply.

Amperes MR1301 / AR1400 is used as message recorder, in which it can also become an input source.



Adjust to Min

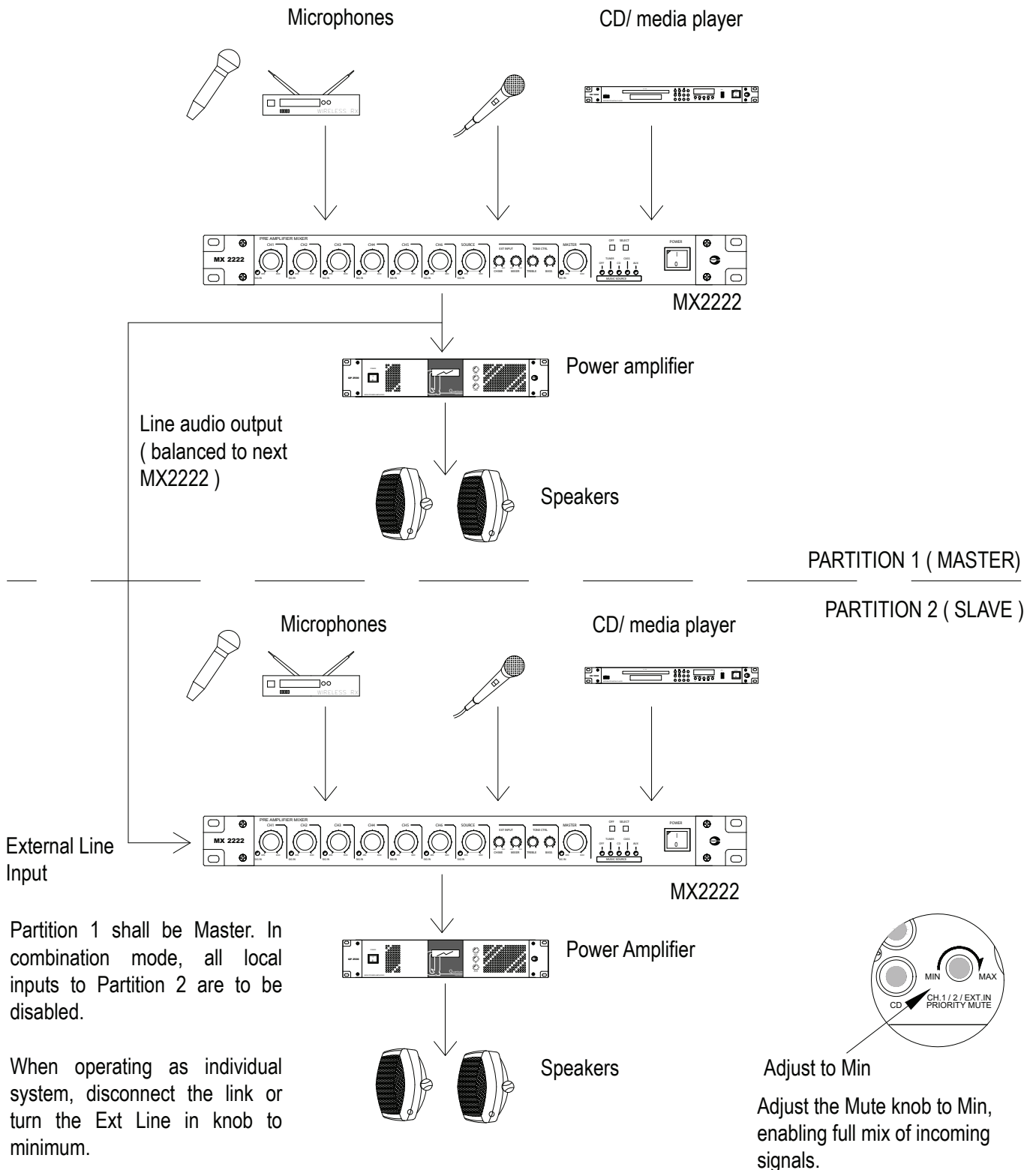
Adjust the Mute knob to Min, enabling full mix of incoming signals.

Application Example - Multiple Room Combination

This example shows multiple MX2222 are to be linked together when required to combine several rooms into a single entity. Among the applications is the school classrooms or hotel function rooms which in normal condition, are separated.

Though this requirement is achievable, we would recommend using Matrix for combination and separation of different partitions.

This can also be applied to several sub system in PA installations. Each sub system will have its individual paging and music but would allow central paging to override the local system.



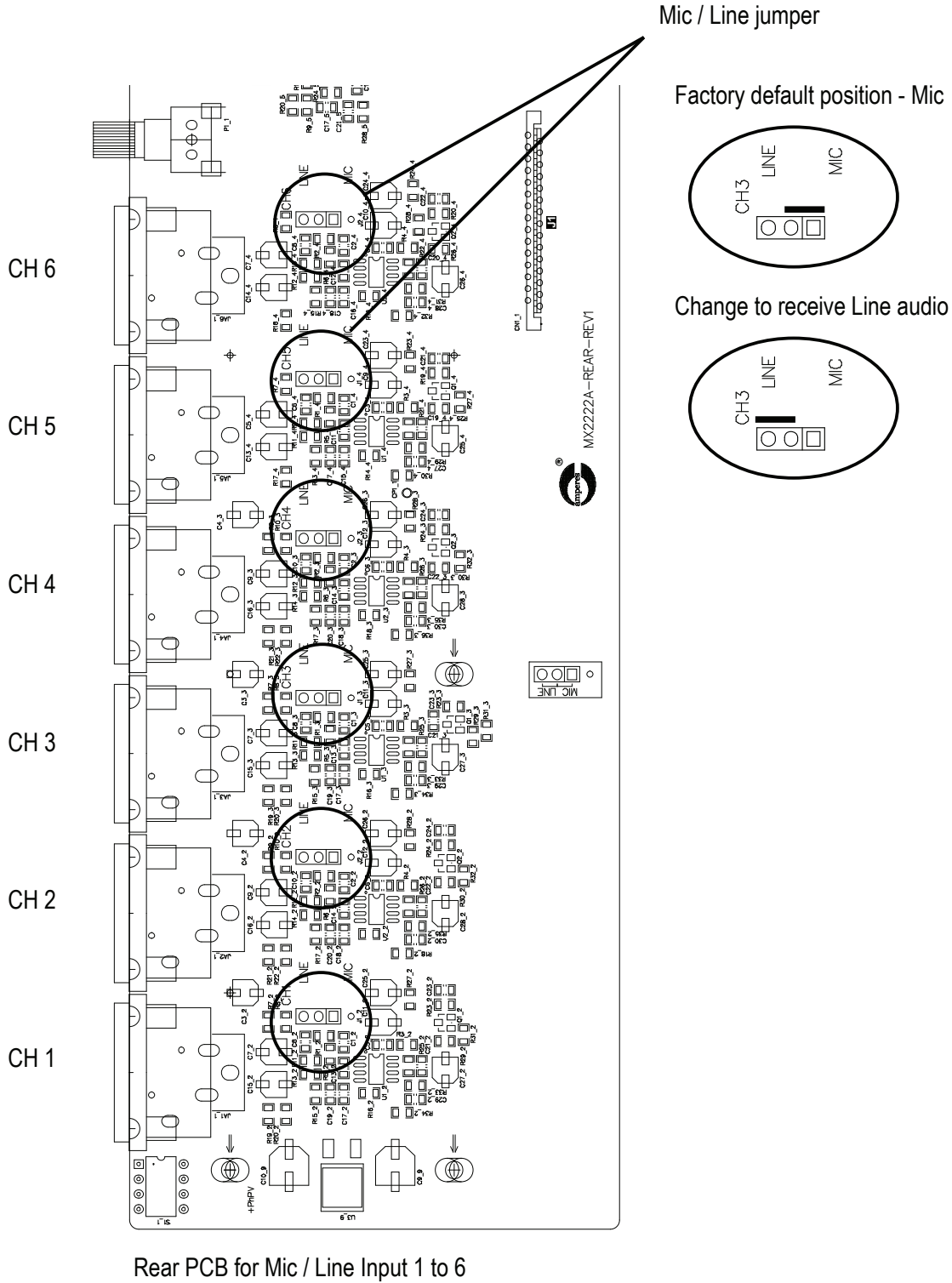
Partition 1 shall be Master. In combination mode, all local inputs to Partition 2 are to be disabled.

When operating as individual system, disconnect the link or turn the Ext Line in knob to minimum.

Changing Input Level for CH1 to CH6

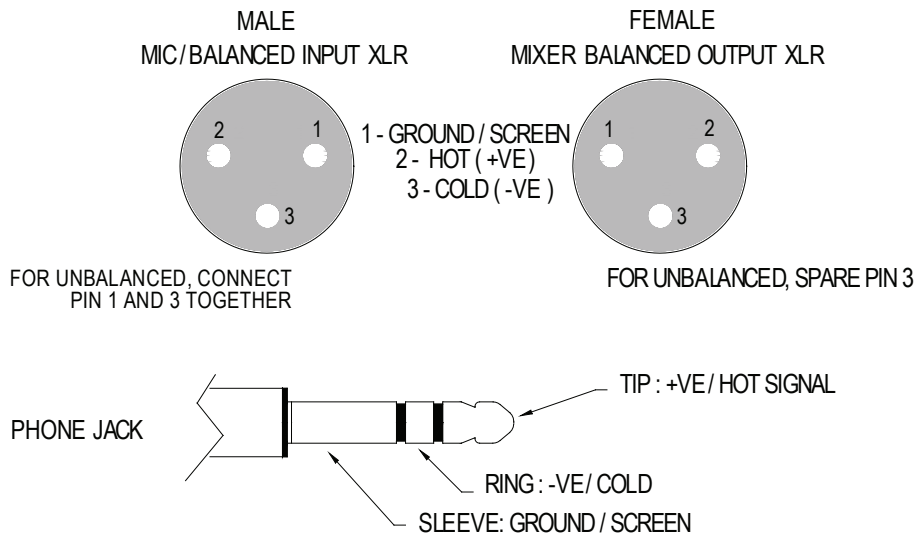
By factory default, all inputs from CH 1 to CH 6 are set to accept Mic level signal. When there are requirement to use line level sources, these inputs can be switched to accept line audio with +4 dBu (1.25V rms).

Open the cover and change the position of the jumper as shown below.



Audio Signal Connections

The diagram below shows pin configurations of XLR 3 pin Male and Female connectors as well as stereo phone jack which is also used to connect balanced audio signals.



Unbalanced signals

Unbalanced system is found in most home AV system which uses two conductors to carry the audio signals, one being "hot" and the other as "Ground"

Balanced signals

Two twisted cable and a ground shielding conductors are used to carry signal in a balanced system. The two signal conductors transmit identical input signals but are out of phase with each other and the shielding conductor represents ground / common.

Balanced signal is suitable for long distance audio transmission as they are less prone to noise pick up. Most professional systems use this method of audio connection.

Unbalanced source to Balanced input terminal

If it is required to connect unbalanced source to the mixer with balanced connection, simplest method is to join Pin 1 and 3 of XLR connector or the stereo phone jack.

The best practice is to use a converter to this purpose. This is applicable for connection from balanced to unbalanced input port. A DI box (or line to XLR converter) is recommended.

Technical Specifications

| | |
|------------------------------|---|
| Operating voltage | 220 - 240V AC or 24V DC Back Up |
| Power consumption | 240V AC : 4.8W ; 20 mA 24V DC : 2.4W ; 100 mA |
| Input channels | 6 x Mic / Line, 4 x RCA BGM Chime line in Ext line Mixer in |
| Input impedance | Mic : 4.7 k Ohm balanced BGM : 47 k Ohm unbalanced Chime / Mixer link : 10 k Ohm |
| Sensitivity (0 dBu output) | Line : 500 mV rms (unbalanced) Mic : 25 mV rms (unbalanced) |
| Output level | 1.25 V XLR balanced (mixed output) ; +4 dBu 1.0 V phone jack balanced (BGM output) |
| Output impedance | 600 Ohm balanced |
| Controls | Mic / line, chime, ext mixer input Master mix (BGM) Bass and treble controls |
| Phantom Power | 12V DC switchable at Mic/Line 1 to 4 |
| S/N ratio | > 60 dB at 1 kHz |
| Dimensions (WxHxD) | 482 x 44 x 180 mm |
| Weight (Nett) | 2.2 kg |

NOTE :

The above technical specifications are subjected to change due to product improvement.



This product conforms to EU LVD Directive 2014/35/EU and EMC Directive 2014/30/EU with following test standards :

EN62368-1 : 2014 + A11 : 2017

EN55032 : 2015,

EN55035 : 2017

EN61000-3-2 : 2014

EN61000-3-3 : 2013

Warranty Conditions

Only Amperes Electronics Service Centres are allowed to make warranty repairs : a list of Amperes Electronics Service Centres may be asked for by the purchaser or send directly to Amperes Electronics Sdn Bhd at 70 Jalan Industri PBP 3, Tmn Perindustrian Pusat Bandar Puchong, 47100, Puchong, Selangor, Malaysia or its authorized dealers. This warranty is not valid if repairs are performed by unauthorized personnel or service centres.

This warranty covers only repairs and replacement of defective parts ; cost and risks of transportation as well as removal and installation of the product from the main system are for the account of the purchaser. This warranty shall not extend to the replacement of the unit.

This warranty does not cover damages caused by misuse, neglect, accident of the product as well as using the product with power supply voltage other than shown on the product, or any other power supply source / adaptor not recommended by the manufacturer.

This warranty does not cover damages caused by fire, earthquakes, floods, lightning and every cause not directly related to the unit.

This warranty does not include any indemnity in favor of the purchaser or the dealer for the period out of use of the unit; moreover the warranty does not cover any damages which may be caused to people and things when using the product.

This warranty certificate is valid only for the described product, and is not valid if modifications are made on this certificate or on the identification label applied on the product.

This warranty covers all the material and manufacturing defects and is valid for a period of 36 months from the date of purchase or for a specified period in countries where this is stated by a national law. In this case, the extension is valid only in the country where the product is purchased.

Amperes Electronics Sdn Bhd is not obliged to modify previously manufactured products under warranty if the design changes or improvements are made.

Disclaimer

Information contained in this manual is subject to change without prior notice and does not represent a commitment on the part of the vendor. AMPERES ELECTRONICS SDN BHD shall not be liable for any loss or damages whatsoever arising from the use of information or any error contained in this manual.

It is recommended that all services and repairs on this product be carried out by AMPERES ELECTRONICS SDN BHD or its authorized service agents.

AMPERES series must only be used for the purpose they were intended by the manufacturer and in conjunction with this operating manual.

AMPERES ELECTRONICS SDN BHD cannot accept any liability whatsoever for any loss or damages caused by service, maintenance or repair by unauthorized personnel, or by use other than that intended by the manufacturer.



ISO 9001:2015
Design & Manufacture of Public Address Equipment and Systems
Certificate No. 16895 / A / 0001 / UK / En



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MADE IN MALAYSIA
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